DEPARTMENT OF HEALTH & HUMAN SERVICES

Federal Occupational Health
2165 West Park Court, Suite C
Stone Mountain, Georgia 30087

July 10, 2015

Mr. John E. Bogardus, Jr.
Safety and Environmental Management Branch
General Services Administration
77 Forsyth Street (4PMC)
Atlanta, Georgia 30303

Dear Mr. Bogardus:

This report is a continuation of the previous report generated on the topics discussed in this report. The previous report entitled *"FL0033ZZ Miramar Cedar Art Site Visit Preliminary Report (FL2049)"* is incorporated into this report in order to maintain all the information previously reported into a single report.

At your request, Federal Occupational Health (FOH), Douglas Ebert, CDR, USPHS, PE conducted a site visit and air sampling at the Benjamin P. Grogan and Jerry L. Dove Federal Building (FL0033ZZ). This request is in response to reported adverse health effects suspected to be caused by a recently installed western red cedar statue located at 2030 S.W. 145th Avenue, Miramar, FL 33027. One of the reported cases of cedar allergy has occurred at the first floor medical unit. This site visit consisted of air sampling, dust sampling and a general indoor air quality evaluation. CDR Ebert was accompanied by GSA Juan Perez and an FBI representative.

BACKGROUND

The statue located in the lobby of FL0033ZZ was created out of western red cedar. The artist uses this wood exclusively imported from Vancouver Canada. Western red cedar contains a compound called plicatic acid. Plicatic acid has been attributed to cases of asthma and allergic sensitization in 5% of sawmill and wood industry workers. Plicatic acid, however, is a solid at room temperature. Therefore, plicatic acid in indoor environments is likely only to occur in the particulate phase and is contained within the wood resin. Exposures are only expected through direct contact with the wood or wood dust to include inhalation of the wood dust.

The statue was installed in May 2015. Anecdotally, the statue arrived and was transported through the building to its assembly point in the lobby. Reportedly, the statue was vacuumed prior to delivery but dust was released during transport and assembly. Plastic sheeting and floor protection was reportedly used to control dust and dirt. The cleanliness of the statue installation cannot be confirmed or denied by this survey.

In addition to the possible western red cedar allergens, it is notable that the entire statue is glue laminated with a formaldehyde based glue catalyst. All gluing was completed off site before delivery

to FL0033ZZ. According to the CDC, "Formaldehyde irritates the airways. People with asthma, bronchitis, or other breathing conditions are especially sensitive to formaldehyde. People with other chronic diseases also may be less able to tolerate formaldehyde exposure." Symptoms can be similar to other allergens and can be mistaken as an allergic reaction.

The statue was also coated with graphite to highlight the wood texture. Graphite is generally benign and is not normally considered an allergen.

As a precaution, the statue is currently wrapped in plastic sheeting to contain any dust or volatiles that may be generated by the statue.

METHODOLOGY

Dust samples were collected on tape lifts and submitted for analysis. The tape samples were analyzed using microscopy for western cedar dust. Samples were collected in areas in the lobby, the air handling unit, and the first floor nurse's station. Analysis may be able to ascertain if dust was generated during installation of the statue that may have spread into other areas of the building.

Aldehyde and ketone air samples were collected using passive dosimeters and active air collection. Superlco Diffusive Sampling Devices (DSD-DNPH) were used to passively collect air samples. Silica tubes were used to collect aldehydes actively. Active samples were collected at approximately 200 ml/min for approximately 2 hours at each sample site. Samples were collected in the lobby, inside the plastic sheeting covering the statue, in the first floor nurse's office, and in a distant sixth floor open office area. These samples should indicate how much formaldehyde is being generated by the statue, how much is contained by the plastic sheeting and how much is detectable in areas where people are known to have had respiratory problems. Results will be compared to OSHA standards and LEED building standards.

Volatile organic compounds (VOC) were actively sampling using thermal desorption tubes collected at approximately 200 ml/min for approximately 2 hours at each sample site. Samples were collected in the lobby, inside the plastic sheeting covering the statue, in the first floor nurse's office, and in a distant sixth floor open office area. These samples should indicate how much VOC is being generated by the statue, how much is contained by the plastic sheeting and how much is detectable in areas where people are known to have had respiratory problems. Results will be compared to OSHA standards and LEED building standards.

The air handling units for the first and second floors were visually evaluated. The filter change out schedule was evaluated. Dust samples were collected inside the first and second floor air handling unit.

PRELIMINARY OBSERVATIONS

Dust was prevalent on inaccessible horizontal surfaces such as on top of door frames. Dust is also likely to be found on inaccessible blinds in the lobby and throughout the building. The blinds were observed being dusted using a feather duster to the extent that the cleaning staff could reach. If dust samples are found to contain cedar dust, these surfaces could be a continued source of irritation.

Dust was found inside the air handlers for the first and second floors. Dust samples were collected for further analysis. Filtration consisted of Aerostar 20x20x2 pleated MERV 8 pre-filers followed by Aerostar PN16441 20x20x12, 85% synthetic rigid cell box filters. Pre-filters are changed out every two months or if there is sufficient pressure drop measured to warrant a filter change. All pre-filters had been changed out as recently as June 2015 and appeared clean.

Fresh outside air is delivered on a variable basis. The amount of outdoor fresh air introduced into the system is based on the amount of carbon dioxide (CO_2) present in the air. CO_2 is a byproduct of human respiration. Because of this, the higher the occupancy of the building in each air zone, the higher the percentage of fresh air. The building is currently set to maintain a consistent average CO_2 of 500-600 ppm and a relative humidity of 45%.

The cleaning compounds used in FL0033ZZ are GSA green products. There have not been any additional cleaning products or changes in products within the past year. Personnel experiencing reported respiratory problems were not available for interview with FOH.

No odors were detected by FOH during this survey and the general indoor air quality parameters were as follows:

Time	*Location*	*CO_2 (ppm)*	*Temp (deg F)*	*Humidity (%)*	*CO (ppm)*
1000	Lobby	489	72.9	52.7	0.0
1038	Medical Unit NW-106	585	71.9	52.8	0.0
1525	NW-610F	591	73.1	50.3	0.0

All indoor air quality parameters were within acceptable ASHRAE recommended standards.

RESULTS

1. Dust samples were collected on tape lifts and submitted for analysis. Cellulose (wood fibers) were observed in one of the samples; however, they were not consistent with western red cedar (the sculpture is constructed of western red cedar). Microscopy revealed that the wood dust observed was that of machine cut wavy fibers consistent with paper and commonly seen in most office buildings. The bulk of the dust observed in the other samples were consistent with calcium carbonate that one would associate with sanded joint compound, paints and other construction debris typical of interior finish materials used in commercial buildings.

2. Air samples for aldehyde and ketones were collected for 24 hours using passive HPLC methods. The results are summarized in the table below. The OSHA Permissible Exposure Limit (PEL) for formaldehyde is based on an averaged 8-hour personal exposure. Raw laboratory results are contained in Attachment 1.

Location	*Acetaldehyde (ppmV)*	*Formaldehyde (ppmV)*
Lobby	0.0040	0.022
Remote Office 624 D	0.0039	0.021
Nurses Office 106C	0.0047	0.028
OSHA PEL	200	0.75

None of the 24 hour passive monitoring samples exceeded the OSHA PEL. One of three formaldehyde measurements obtained inside the occupied portion of the building is in excess of the LEED established limit of 27 ppb. The remainder of the results presented in the table above represent normal values commonly found in commercial office buildings and are indicative of ambient background levels.

3. Active samples were collected using silica tube at approximately 200 ml/min for approximately 2 hours at each sample site. Raw laboratory results are contained in Attachment 2. The OSHA Permissible Exposure Limit (PEL) for formaldehyde is based on a full 8-hour personal exposure. The results presented below represent a two-hour area sample and are not representative of an 8 hour day. Several factors can influence the concentrations throughout the day including air turbulence from moving people and/or elevators and increased dilution air flow from additional ventilation load. The results of actively collected aldehydes are summarized in the table below.

Location	*Acetaldehyde (ppmV)*	*Formaldehyde (ppmV)*
Lobby	0.0071	0.028
Lobby (inside art plastic enclosure)	0.20	**0.82**
Remote Office 610 F	0.0051	0.021
Nurses Office 106C	0.0047	0.019
OSHA PEL	200	0.75

One sample, collected inside the plastic covering of the art, exceeded the OSHA PEL. This sample is not representative of building occupants. Occupants do not breathe the air under the tarps covering the statue. As stated above, these area air samples are not representative of a full 8-hour work day. One of three formaldehyde measurements obtained inside the occupied portion of the building is in excess of the LEED established limit of 27 ppb. The remainder of the results presented in the table above represent normal values commonly found in commercial office buildings and are indicative of ambient background levels.

4. Test data from acetaldehyde and formaldehyde samples collected separately using the active and passive methods confirms the general stability/reproducibility of the measured concentrations in areas of the building. While the data shows some variation between sorbent systems used over the sampling times collected, in general, these differences in the two data sets is very small given

the very low concentrations of analytes measured. A comparison of the data between the two methods is summarized in the table below.

	Acetaldehyde (ppmV)		*Formaldehyde (ppmV)*	
Location	***2-hour Sorbent Tube***	***24-hour Passive Tube***	***2-hour Sorbent Tube***	***24-hour Passive Tube***
Lobby	0.0071	0.0040	0.028	0.022
Lobby (inside art plastic enclosure)	0.20	Not Sampled	**0.82**	Not Sampled
Remote Office 610 F	0.0051	0.0039	0.021	0.021
Nurses Office 106C	0.0047	0.0047	0.019	0.028
OSHA PEL	200	200	0.75	0.75

5. Volatile organic compounds (VOC) were actively sampling using thermal desorption tubes collected at approximately 200 ml/min for approximately 2 hours at each sample site. Raw laboratory results are contained in Attachment 2. The OSHA Permissible Exposure Limit (PEL) standards are based on a full 8-hour exposure. The results presented below represent a two-hour sample and are not representative of an 8 hour day. The results of VOC analysis are summarized in the table below. The last time of the table is the total of the VOCs (TVOC) measured at each location.

Volatile Organic Compounds Detected above Laboratory Detection Limits (all values in parts per million by volume (ppmV))

Compound	*Lobby*	*Lobby (inside art enclosure)*	*Remote Office 610F*	*Medical Station 106C*	*OSHA PEL*	*Common Sources*
1-Butanol	0.0032	0.0017	0.0033	0.0020	100	solvent used in paints and coatings
1-Methoxy-2 – Propanol	0.00036	BDL	0.00025	BDL	NA	solvent used in paints and coatings
2- Butoxyethanol	0.0020	0.0011	0.0013	0.0017	50	solvent used in paints, coatings & cleaning products
2- Ethyl -1 Hexanol	0.0020	0.0011	0.0023	0.0015	NA	used in plasticisers, coatings, adhesives (asso. With PVC)
2-Ethylhexanoic Acid	0.00042	BDL	BDL	BDL	NA	used in adhesive, sealants and plasticizers
alpha-Pinene	BDL	BDL	0.00016	0.00016	NA	in oils associated with coniferous trees (pine)
Benzothiazole	BDL	BDL	BDL	0.00021	NA	intermediate - not common
BHT	BDL	0.00015	BDL	0.00012		antioxidant additive used in some hydraulic fluids & gear oils
Butyraldehyde	BDL	BDL	BDL	0.0003	NA	intermediate asso. With butane
Caprolactam	BLD	BDL	0.0037	BDL	NA	asso. with dyes & nylon 6 in flooring products
Carbon Disulfide	0.0027	0.0012	0.0016	0.0016	20	rayon, cellophane rubber chemicals & pesticides
Decane	0.0010	0.0017	0.00053	0.0007	NA	petroleum intermediate

Dodecane	0.0032	0.0073	0.00028	0.00028	NA	intermediate asso. with paraffin & greases
Ethyl Acetate	0.00051	**0.054**	0.00025	BDL	400	solvent used in adhesive, sealants and paints
Ethyl Benzene	0.00036	0.00025	0.00022	0.00021	100	intermediate asso. with styrene also adhesives
Hexanal	0.0022	0.0026	0.0018	0.0016	NA	aldehyde asso. with eng. woods
Hexane	BDL	0.0048	BDL	BDL	500	common non-polar solvent for glues, adhesives & varnishes
Isopropanol	0.0016	BDL	0.0023	BDL	400	solvent used in adhesive, sealants and paints
Limonene	0.0021	0.0019	0.0011	0.0022	NA	cleaning products & fragrance
m- & p- Xylene	BDL	0.00063	0.0004	0.00035	100	solvent used in rubber, adhesive and paints
MIBK	BDL	**0.019**	BDL	BDL	100	solvent used in adhesive, paints and coatings
Naphthalene	BDL	BDL	0.00017	0.00046	10	petroleum distillate used I fuels and adhesives
Nonanal	0.0016	0.0016	0.00068	0.00089	NA	odorant asso. with cleaners
Octanal	0.00079	0.00047	0.00042	0.00038	NA	aldehyde used as a odorant
o-Xylene	0.00041	0.00027	0.00022	0.00021	100	solvent used in paints, coatings and used as a fuel additive
Pentanal	0.00078	BDL	0.00081	0.00058	NA	aldehyde associated with rubber
Phenol	0.0093	0.0037	**0.010**	0.0039	5	phenolic resins asso. engineered woods
Styrene	0.00038	0.00023	0.00024	0.00024	100	used in plastics thermosetting compounds and resins
Tetrachloroethylene	0.00031	0.00018	0.00023	0.00029	100	solvent assoc. with textiles
Tetradecane	0.00019	0.0017	0.00015	0.00011	NA	alkane intermediate used as flame retardant and in lubricants
Toluene	0.0012	0.0034	0.00082	0.00069	200	feedstock and solvent in adhesive, paints and rubber
Undecane	0.00049	0.0004	0.00045	0.00044	NA	lubricants and greases
TVOC	0.72 mg/m^3	**2.2 mg/m^3**	0.60 mg/m^3	0.48 mg/m^3	NA	NA

BDL *= Below Detection Limit*
Bold *= significantly higher values (on a comparison basis)*
Blue Highlight *= top 20+ airborne chemical compounds commonly found indoor commercial buildings*

The Total VOC (TVOC) measured inside the plastic tarps containing the art statue are skewed high because the plastic enclosure is preventing VOCs from escaping into the ambient air.

The individual VOCs measured inside the lobby art enclosure and other areas of the building are typical for similar commercial buildings. None of the VOCs identified are considered unusual and all of the measured concentrations are considered very low and are similar to normal ambient background levels.

Two of the three TVOC measurements obtained in occupied parts of the building are in excess of the LEED limit established of 0.5mg/m^3.

DISCUSSION

1. The known allergen and sensitizer for western red cedar, plicatic acid, exists as a solid at room temperature. Reaction to plicatic acid would require contact with the statue itself or from dust. Dust samples contained normal office environment debris and did not contain western cedar dust. There is no evidence to suggest that western cedar dust is responsible for the reported allergenic-like responses reported.

2. Discovery of formaldehyde within the plastic containment for the art piece was expected. The glue used to place the 4"x4" timbers within the sculpture was *Resorcinol Resin* by *Borden Cascophen*, with a formaldehyde catalyst. The glue was applied in the artist's studio six months prior to installation. Formaldehyde is commonly used in wood products and adhesives. Generally they require a period to off-gas before being used in an indoor environment.

   Two factors can cause the off -gassing period to take longer than expected. First, the size of the object can cause the vapors to linger in the wood taking longer to reach equilibrium with its environment. Secondly, the ambient temperature, pressure and humidity can affect the time required for formaldehyde to off-gas. LEED researchers have discovered that formaldehyde products produced and stored in relatively dry environments during the off-gassing period can have a second period of off-gassing if the material is moved into a relatively humid environment. For example, if the sculpture was dried after completion for six months in the artist's studio, the subsequent movement of the sculpture to south Florida could have initiated a second off-gassing phase. There is no way to tell given the limited data if off-gassing is decreasing and if so, at what rate. There is a possibility that the statue underwent off-gassing when it was first delivered and that the amount of off-gassing is decreasing.

   The formaldehyde levels in the rest of the building were characteristic of normal office environments but surprisingly higher than expected for a LEED building. The initial LEED certification air samples for this building should be obtained from the architect and compared to these results.

   Given the formaldehyde levels found in the ambient air, we would not expect to see adverse health effects. Individuals with extreme sensitivity to formaldehyde, could possibly exhibit a reaction, but this reaction would not be unique to this building. They would likely have similar reactions to many office buildings with similar formaldehyde levels.

3. Volatile Organic Compounds (VOCs), are ubiquitous in our environment. The levels and variety found in this building were not out of the ordinary; however, the Total VOCs (TVOC) measured were surprisingly higher than expected for a LEED certified building. Nevertheless, given the variety and concentrations of VOCs found, we would not expect to see any adverse health effect.

4. The covering over the statue allows VOCs and aldehydes to building up inside the plastic. There is no evidence to show if removing the plastic will result in elevated VOCs or aldehydes within the building. Given that the amount of fresh air supplied to the building is influenced by occupancy, we suspect ambient concentrations of VOCs and aldehydes to be present in the early mornings or after weekends when occupancy is low. We can theorize that there is sufficient air exchange to prevent an increase in VOCs or aldehydes even during evenings and weekends; however, this should be confirmed with air sampling.

RECOMMENDATIONS

1. We did not uncover sufficient evidence during this study to implicate the statue to health effects. Because of the possibility that the plastic covering over the sculpture is containing VOCs and aldehydes and preventing higher concentrations in the workplace, we recommend removing the plastic covering and repeating air sampling during early morning hours and after a weekend.

2. We recommend comparing the data collected during this survey with the certifying LEED Platinum air sampling data performed prior to occupancy. The purpose of this comparison is to see what impact the sculpture and/or other changes in office furnishing may be having on the general indoor air quality.

If there are any questions regarding this report, please contact me at 301-512-1917.

Sincerely,

(b) (6)

J. Douglas Ebert, CDR, USPHS, PE
Senior Operations Manager, Enviornmental, Health and Safety Services
Federal Occupational Health
Program Support Center
U.S. Department of Health & Human Services
2165 West Park Ct., STE C
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ATTACHMENT 1
LABORATORY REPORT
PASSIVE ALDEHYDE DOSIMETERS

ATLANTA
Corporate Headquarters
3945 Lakefield Court
Suwanee, GA 30024
(770) 866-3200 FAX (770) 866-3259

Federal Occupational Health
2165 West Park Court, Suite C
Stone Mountain, GA 30087

Attention: Doug Ebert

Received: 07/06/2015
Reported: 07/10/2015
Client Project No: FL2049: Cedar Art Allergy Study
Client Project:

Analyst: WRS

Analysis: Organics by High Performance Liquid Chromatography; UV Detector
Media:

MAS Sample ID	Client ID	Qualifier	Analyte	Total ug	Air vol (L)	mg/m³	ppmV	Date Sampled	Date Analyzed	Method
1501118-01	PD-01		Acetaldehyde	0.74	104	0.0072	0.0040	07/01/15	07/10/15	NIOSH 2016
	PD-01		Formaldehyde	2.8	104	0.027	0.022	07/01/15	07/10/15	NIOSH 2016
1501118-02	PD-02		Acetaldehyde	0.86	103	0.0084	0.0047	07/01/15	07/10/15	NIOSH 2016
	PD-02		Formaldehyde	3.5	103	0.034	0.028	07/01/15	07/10/15	NIOSH 2016
1501118-03	PD-03		Acetaldehyde	0.72	102	0.0070	0.0039	07/01/15	07/10/15	NIOSH 2016
	PD-03		Formaldehyde	2.6	102	0.026	0.021	07/01/15	07/10/15	NIOSH 2016
1501118-04	PD-04		Acetaldehyde	< 0.062				07/01/15	07/10/15	NIOSH 2016
	PD-04		Formaldehyde	< 0.046				07/01/15	07/10/15	NIOSH 2016

Acetaldehyde LOQ = 0.018 ug
Formaldehyde LOQ = 0.018 ug

All quality control samples and checks are within acceptance limits unless otherwise indicated.
Reported concentrations are based on sampling information as provided by the client. MAS assumes no responsibility for the accuracy of sampling information. Test results pertain only to those items tested.
Not blank corrected unless otherwise noted.

LOQ = Limit of Quantitation
µg = micrograms
mg = milligrams

µg/m³ = micrograms per cubic meter
mg/m³ = milligrams per cubic meter
ppmV = parts per million by volume

Review: Dan Stoney For Bob Schmitter, Emissions Department Manager 07/10/2015

Organics by High Performance Liquid Chromatography; UV Detector - Quality Control

Analyte	Spike Amt	Result	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch B15G022 - Passive Badge - IHSVOC			**Formaldehyde**					
Blank (B15G022-BLK1)				Prepared & Analyzed: 10-Jul-15				
Formaldehyde		0.02						
Acetaldehyde		0.02						
LCS (B15G022-BS1)				Prepared & Analyzed: 10-Jul-15				
Formaldehyde	5.00	5.0		99.3	90-110			
LCS Dup (B15G022-BSD1)				Prepared & Analyzed: 10-Jul-15				
Formaldehyde	5.00	4.9		98.6	90-110	0.707	20	

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µg = micrograms
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Review: Dan Stoney For Bob Schmitter, Emissions Department Manager 07/10/2015

1501118

US PUBLIC HEALTH SERVICE, FEDERAL OCCUPATIONAL HEALTH CHAIN-OF-CUSTODY / FIELD DATA SHEET

Materials Analytical Services, Inc.
3945 Lakefield Court
Suwanee, GA 30024

Attn: Sample Receiving (Michael Mount, Project Manager)

Contact Information
Name: CDR Douglas Ebert, PE
Address: 2165 West Park Court, Suite C
Stone Mountain, GA 30087
Phone/Fax: 301-512-1917
Email: douglas.ebert@foh.hhs.gov

PROJECT REFERENCE INFORMATION

Project: FL2049: Cedar Art Allergy Study (FL0033ZZ)
A 138630 S 189844 P 189845
Bldg Number: FL0033ZZ
Location: Dobbins ARB

For Lab Use Only
Project /Report #:
Due Date:
Samples Received Chilled? YES NO

Conditions on Receipt with Name & Date

Water Sample Codes[3]
Container Types:
P-Plastic G-Glass V-VOC
Preservatives:
A-None B-H2SO4
C-HNO_3 D-NaOH
D-Other

Turn Around Time Codes[4]

STD	Standard
R	Rush@
2D	Two Day Rush*
ND	Next Day Rush*@
SD	Same Day Rush*@
WH	Weekend/Holiday*

Analysis Requested
Aldehydes & Ketones

Sample Number	Type[1]	Media[2]	Collection Date	Collection Time	Sample Location / Description	Air Flow (LpM)	Air Time (Min.)	Air Volume (Liters)	Wipe Area (in^2)	Water Volume (Liters)	Water Code[3]	Turn Around Time[4]	Lab ID #	Aldehydes & Ketones		
PD-01	1	12	7/1	0814	Lobby, Main Entrance									X		
PD-02	1	12	7/1	0827	NW-106C, Nurses office									X		
PD-03	1	12	7/1	0840	NW-024D									X		
PD-04	1	12	7/1	-	Blank									X		

Sample Type Codes[1]
1-Air 2-Water 3-Paint 4-Soil 5-Dust
6-Bulk 7-Wipe 8-Contact Plate
9-Tape 10-Spore Trap (Zefon & others)
11-Other

Sample Media Codes[2]
1-Charcoal 2-XAD 3-Matched Weight
4-Preweighted 5-MEA 6-CCA 7-R2A/TSA
8-Air-O-Cell Cassette 9-MCE Cassette (0.45)
10-MCE Cassette (0.8) 11-MCE Filter 12-Other

Relinquished By	Date & Time	Received By	Date & Time
CDR Douglas Ebert, PE		[redacted]	7-6-15 10:25 am

COMMENTS: *email .pdf format report to: douglas.ebert@foh.hhs.gov

* Applied to non-viable microbiological samples only. @ Applied to asbestos samples, SD: 2-hour PLM/PCM, 6-hour TEM; ND: 24-hour; R: 3-5 business days.

Shipping Package Inspected By:
1. WT Date 7-6-15
2. MS Date 7-6-15

ATTACHMENT 2
LABORATORY REPORT
ACTIVE SAMPLES VOCs & ALDEHYDES

ATLANTA
Corporate Headquarters
3945 Lakefield Court
Suwanee, GA 30024
(770) 866-3200 FAX (770) 866-3259

Federal Occupational Health
2165 West Park Court, Suite C
Stone Mountain, GA 30087

Attention: Cliff Moseley

Received: 07/02/2015
Reported: 07/07/2015
Client Project No: FL2049
Client Project: Cedar Art Allergy Study

Analyst: WRS

Analysis: Organics by High Performance Liquid Chromatography; UV Detector
Media: 226-119 Treated Silica Gel

MAS Sample ID	Client ID	Qualifier	Analyte	Total ug	Air vol (L)	mg/m³	ppmV	Date Sampled	Date Analyzed	Method
1501111-02	5815		Acetaldehyde	0.31	24	0.013	0.0071	07/01/15	07/07/15	NIOSH 2016
	5815		Formaldehyde	0.83	24	0.035	0.028	07/01/15	07/07/15	NIOSH 2016
1501111-04	5814		Acetaldehyde	9.1	24.6	0.37	0.20	07/01/15	07/07/15	NIOSH 2016
	5814		Formaldehyde	25	24.6	1.0	0.82	07/01/15	07/07/15	NIOSH 2016
1501111-06	5816		Acetaldehyde	0.24	26.3	0.0091	0.0051	07/01/15	07/07/15	NIOSH 2016
	5816		Formaldehyde	0.68	26.3	0.026	0.021	07/01/15	07/07/15	NIOSH 2016
1501111-08	5813		Acetaldehyde	0.21	25.4	0.0084	0.0047	07/01/15	07/07/15	NIOSH 2016
	5813		Formaldehyde	0.61	25.4	0.024	0.019	07/01/15	07/07/15	NIOSH 2016

Analysis: Thermal Desorption Analysis by Gas Chromatography, GCMS
Media: Tenax Tube

MAS Sample ID	Client ID	Qualifier	Analyte	Total ug	Air vol (L)	mg/m³	ppmV	Date Sampled	Date Analyzed	Method
1501111-01	238089		1,1,1-Trichloroethane	< 0.020	15.6	<0.0013	<0.00023	07/01/15	07/06/15	TO-17
	238089		1,1-Dichloroethylene	< 0.020	15.6	<0.0013	<0.00032	07/01/15	07/06/15	TO-17
	238089	TIC-01	1,2,4-Trimethylbenzene	0.057	15.6	0.0036		07/01/15	07/06/15	
	238089		1,4-Dichlorobenzene	< 0.020	15.6	<0.0013	<0.00021	07/01/15	07/06/15	TO-17
	238089		1,4-Dioxane	< 0.020	15.6	<0.0013	<0.00036	07/01/15	07/06/15	TO-17

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µg = micrograms
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µg/m³ = micrograms per cubic meter
mg/m³ = milligrams per cubic meter
ppmV = parts per million by volume

Review: Dan Stoney For Bob Schmitter, Emissions Department Manager 07/07/2015

Analysis: Thermal Desorption Analysis by Gas Chromatography, GCMS
Media: Tenax Tube

MAS Sample ID	Client ID	Qualifier	Analyte	Total ug	Air vol (L)	mg/m³	ppmV	Date Sampled	Date Analyzed	Notes
	238089		1-Butanol	0.15	15.6	0.0098	0.0032	07/01/15	07/06/15	TO-17
	238089		1-Methoxy-2-Propanol	0.021	15.6	0.0013	0.00036	07/01/15	07/06/15	TO-17
	238089		1-Methyl-2-Pyrrolidone	< 0.020	15.6	<0.0013	<0.00032	07/01/15	07/06/15	TO-17
	238089		2-Butoxyethanol	0.15	15.6	0.0095	0.0020	07/01/15	07/06/15	TO-17
	238089		2-Ethoxyethanol	< 0.020	15.6	<0.0013	<0.00035	07/01/15	07/06/15	TO-17
	238089		2-Ethoxyethanol Acetate	< 0.020	15.6	<0.0013	<0.00024	07/01/15	07/06/15	TO-17
	238089		2-Ethyl-1-hexanol	0.16	15.6	0.011	0.0020	07/01/15	07/06/15	TO-17
	238089		2-Ethylhexanoic acid	0.038	15.6	0.0025	0.00042	07/01/15	07/06/15	TO-17
	238089		2-methoxyethanol acetate	< 0.020	15.6	<0.0013	<0.00027	07/01/15	07/06/15	TO-17
	238089		4-Phenylcyclohexene	< 0.010	15.6	<0.00064	<0.000099	07/01/15	07/06/15	TO-17
	238089		4-vinyl cyclohexene	< 0.020	15.6	<0.0013	<0.00022	07/01/15	07/06/15	TO-17
	238089		alpha-Pinene	< 0.020	15.6	<0.0013	<0.00023	07/01/15	07/06/15	TO-17
	238089	TIC-01	Benzaldehyde	0.070	15.6	0.0045		07/01/15	07/06/15	
	238089		Benzene	< 0.020	15.6	<0.0013	<0.0004	07/01/15	07/06/15	TO-17
	238089		Benzothiazole	< 0.020	15.6	<0.0013	<0.00023	07/01/15	07/06/15	TO-17
	238089		Benzyl alcohol	0.051	15.6	0.0033		07/01/15	07/06/15	
	238089		BHT	< 0.020	15.6	<0.0013	<0.00014	07/01/15	07/06/15	TO-17
	238089	TIC-01	butanoic acid, butyl ester	0.080	15.6	0.0051		07/01/15	07/06/15	
	238089		Butyraldehyde	< 0.020	15.6	<0.0013	<0.00043	07/01/15	07/06/15	TO-17
	238089		Caprolactam	< 0.020	15.6	<0.0013	<0.00028	07/01/15	07/06/15	TO-17
	238089		Carbon disulfide	0.13	15.6	0.0083	0.0027	07/01/15	07/06/15	TO-17
	238089		Carbon Tetrachloride	< 0.020	15.6	<0.0013	<0.0002	07/01/15	07/06/15	TO-17
	238089		Chlorobenzene	< 0.020	15.6	<0.0013	<0.00028	07/01/15	07/06/15	TO-17
	238089		Chloroform	< 0.020	15.6	<0.0013	<0.00026	07/01/15	07/06/15	TO-17
	238089		Cyclohexane	< 0.020	15.6	<0.0013	<0.00037	07/01/15	07/06/15	TO-17
	238089	TIC-01	cyclohexasiloxane, dodecamethyl	0.70	15.6	0.045		07/01/15	07/06/15	
	238089	TIC-01	Cyclopentasiloxane, decamethyl-	3.5	15.6	0.23		07/01/15	07/06/15	
	238089	TIC-01	Cyclotetrasiloxane, octamethyl-	0.42	15.6	0.027		07/01/15	07/06/15	
	238089	TIC-01	cyclotrisiloxane, hexamethyl-	0.16	15.6	0.010		07/01/15	07/06/15	

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LOQ = Limit of Quantitation
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Review: Dan Stoney For Bob Schmitter, Emissions Department Manager 07/07/2015

Analysis: Thermal Desorption Analysis by Gas Chromatography, GCMS
Media: Tenax Tube

MAS Sample ID	Client ID	Qualifier	Analyte	Total ug	Air vol (L)	mg/m³		Date Sampled	Date Analyzed	Notes
	238089	TIC-01	Decanal	0.050	15.6	0.0032		07/01/15	07/06/15	
	238089		decane	0.092	15.6	0.0059	0.0010	07/01/15	07/06/15	TO-17
	238089		dodecane	0.035	15.6	0.0022	0.00032	07/01/15	07/06/15	TO-17
	238089		Epichlorohydrin	< 0.020	15.6	<0.0013	<0.00034	07/01/15	07/06/15	TO-17
	238089		Ethyl Acetate	0.029	15.6	0.0018	0.00051	07/01/15	07/06/15	TO-17
	238089		Ethyl Benzene	0.025	15.6	0.0016	0.00036	07/01/15	07/06/15	TO-17
	238089	TIC-01	hexadecane, 3-methyl-	0.060	15.6	0.0038		07/01/15	07/06/15	
	238089		Hexanal	0.14	15.6	0.0092	0.0022	07/01/15	07/06/15	TO-17
	238089		Hexane	< 0.020	15.6	<0.0013	<0.00036	07/01/15	07/06/15	TO-17
	238089		Isophorone	< 0.020	15.6	<0.0013	<0.00023	07/01/15	07/06/15	TO-17
	238089		Isopropanol	0.061	15.6	0.0039	0.0016	07/01/15	07/06/15	TO-17
	238089		limonene	0.18	15.6	0.012	0.0021	07/01/15	07/06/15	TO-17
	238089		m- & p-xylene	0.051	15.6	0.0033	0.00076	07/01/15	07/06/15	TO-17
	238089		Methylene Chloride	< 0.020	15.6	<0.0013	<0.00037	07/01/15	07/06/15	TO-17
	238089		MIBK	< 0.020	15.6	<0.0013	<0.00031	07/01/15	07/06/15	TO-17
	238089		MTBE	< 0.020	15.6	<0.0013	<0.00036	07/01/15	07/06/15	TO-17
	238089		N,N-dimethylformamide	< 0.020	15.6	<0.0013	<0.00043	07/01/15	07/06/15	TO-17
	238089		Naphthalene	< 0.010	15.6	<0.00064	<0.00012	07/01/15	07/06/15	TO-17
	238089		n-Butyl Acetate	< 0.020	15.6	<0.0013	<0.00027	07/01/15	07/06/15	TO-17
	238089		Nonanal	0.14	15.6	0.0091	0.0016	07/01/15	07/06/15	TO-17
	238089		Octanal	0.065	15.6	0.0042	0.00079	07/01/15	07/06/15	TO-17
	238089	TIC-01	octane, 2,6-dimethyl-	0.13	15.6	0.0081		07/01/15	07/06/15	
	238089		o-Xylene	0.027	15.6	0.0018	0.00041	07/01/15	07/06/15	TO-17
	238089		Pentanal	0.043	15.6	0.0027	0.00078	07/01/15	07/06/15	TO-17
	238089		Phenol	0.56	15.6	0.036	0.0093	07/01/15	07/06/15	TO-17
	238089		Styrene	0.025	15.6	0.0016	0.00038	07/01/15	07/06/15	TO-17
	238089		Tentatively Identified Compounds	< 0.020	15.6	<0.0013	<0.0	07/01/15	07/06/15	TO-17
	238089		Tetrachloroethylene	0.033	15.6	0.0021	0.00031	07/01/15	07/06/15	TO-17
	238089		tetradecane	0.024	15.6	0.0015	0.00019	07/01/15	07/06/15	TO-17
	238089		Toluene	0.072	15.6	0.0046	0.0012	07/01/15	07/06/15	TO-17
	238089		Trichloroethylene	< 0.020	15.6	<0.0013	<0.00024	07/01/15	07/06/15	TO-17

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Review: Dan Stoney For Bob Schmitter, Emissions Department Manager 07/07/2015

Analysis: Thermal Desorption Analysis by Gas Chromatography, GCMS
Media: Tenax Tube

MAS Sample ID	Client ID	Qualifier	Analyte	Total ug	Air vol (L)	mg/m³		Date Sampled	Date Analyzed	Notes
	238089		TVOC	11	15.6	0.72		07/01/15	07/06/15	TO-17
	238089		Undecane	0.049	15.6	0.0032	0.00049	07/01/15	07/06/15	TO-17
	238089		Vinyl acetate	< 0.020	15.6	<0.0013	<0.00036	07/01/15	07/06/15	TO-17
	238089		Xylenes, total	< 0.020	15.6	<0.0013	<0.0003	07/01/15	07/06/15	TO-17
1501111-03	241562		1,1,1-Trichloroethane	< 0.020	24.8	<0.00081	<0.00015	07/01/15	07/06/15	TO-17
	241562		1,1-Dichloroethylene	< 0.020	24.8	<0.00081	<0.0002	07/01/15	07/06/15	TO-17
	241562		1,4-Dichlorobenzene	< 0.020	24.8	<0.00081	<0.00013	07/01/15	07/06/15	TO-17
	241562		1,4-Dioxane	< 0.020	24.8	<0.00081	<0.00022	07/01/15	07/06/15	TO-17
	241562		1-Butanol	0.13	24.8	0.0053	0.0017	07/01/15	07/06/15	TO-17
	241562		1-Methoxy-2-Propanol	< 0.020	24.8	<0.00081	<0.00022	07/01/15	07/06/15	TO-17
	241562		1-Methyl-2-Pyrrolidone	< 0.020	24.8	<0.00081	<0.0002	07/01/15	07/06/15	TO-17
	241562		2-Butoxyethanol	0.13	24.8	0.0052	0.0011	07/01/15	07/06/15	TO-17
	241562		2-Ethoxyethanol	< 0.020	24.8	<0.00081	<0.00022	07/01/15	07/06/15	TO-17
	241562		2-Ethoxyethanol Acetate	< 0.020	24.8	<0.00081	<0.00015	07/01/15	07/06/15	TO-17
	241562		2-Ethyl-1-hexanol	0.14	24.8	0.0057	0.0011	07/01/15	07/06/15	TO-17
	241562		2-Ethylhexanoic acid	< 0.020	24.8	<0.00081	<0.00014	07/01/15	07/06/15	TO-17
	241562	TIC-01	2-furancarboxaldehyde	0.36	24.8	0.015		07/01/15	07/06/15	
	241562		2-methoxyethanol acetate	< 0.020	24.8	<0.00081	<0.00017	07/01/15	07/06/15	TO-17
	241562		4-Phenylcyclohexene	< 0.010	24.8	<0.0004	<0.000062	07/01/15	07/06/15	TO-17
	241562		4-vinyl cyclohexene	< 0.020	24.8	<0.00081	<0.00014	07/01/15	07/06/15	TO-17
	241562		alpha-Pinene	< 0.020	24.8	<0.00081	<0.00014	07/01/15	07/06/15	TO-17
	241562		Benzene	< 0.020	24.8	<0.00081	<0.00025	07/01/15	07/06/15	TO-17
	241562	TIC-01	benzene, (1-methylethyl)-	0.26	24.8	0.011		07/01/15	07/06/15	
	241562	TIC-01	benzoic acid, 4-(1-methylethyl)-,	8.8	24.8	0.35		07/01/15	07/06/15	
	241562		Benzothiazole	< 0.020	24.8	<0.00081	<0.00015	07/01/15	07/06/15	TO-17
	241562		BHT	0.034	24.8	0.0014	0.00015	07/01/15	07/06/15	TO-17
	241562	TIC-01	bicyclo[2.2.1]heptane, 2,2-dimethyl	0.24	24.8	0.0095		07/01/15	07/06/15	
	241562		Butyraldehyde	< 0.020	24.8	<0.00081	<0.00027	07/01/15	07/06/15	TO-17
	241562		Caprolactam	< 0.020	24.8	<0.00081	<0.00017	07/01/15	07/06/15	TO-17

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Analysis: Thermal Desorption Analysis by Gas Chromatography, GCMS
Media: Tenax Tube

MAS Sample ID	Client ID	Qualifier	Analyte	Total ug	Air vol (L)	mg/m³	ppmV	Date Sampled	Date Analyzed	Notes
	241562		Carbon disulfide	0.090	24.8	0.0036	0.0012	07/01/15	07/06/15	TO-17
	241562		Carbon Tetrachloride	< 0.020	24.8	<0.00081	<0.00013	07/01/15	07/06/15	TO-17
	241562		Chlorobenzene	< 0.020	24.8	<0.00081	<0.00018	07/01/15	07/06/15	TO-17
	241562		Chloroform	< 0.020	24.8	<0.00081	<0.00017	07/01/15	07/06/15	TO-17
	241562		Cyclohexane	< 0.020	24.8	<0.00081	<0.00023	07/01/15	07/06/15	TO-17
	241562	TIC-01	Cyclohexasiloxane, dodecamethyl-	0.67	24.8	0.027		07/01/15	07/06/15	
	241562	TIC-01	Cyclopentasiloxane, decamethyl-	1.7	24.8	0.067		07/01/15	07/06/15	
	241562	TIC-01	Cyclotetrasiloxane, octamethyl-	0.38	24.8	0.015		07/01/15	07/06/15	
	241562		decane	0.24	24.8	0.0097	0.0017	07/01/15	07/06/15	TO-17
	241562	E	dodecane	1.3	24.8	0.051	0.0073	07/01/15	07/06/15	TO-17
	241562		Epichlorohydrin	< 0.020	24.8	<0.00081	<0.00021	07/01/15	07/06/15	TO-17
	241562	E	Ethyl Acetate	4.8	24.8	0.19	0.054	07/01/15	07/06/15	TO-17
	241562		Ethyl Benzene	0.027	24.8	0.0011	0.00025	07/01/15	07/06/15	TO-17
	241562		Hexanal	0.27	24.8	0.011	0.0026	07/01/15	07/06/15	TO-17
	241562		Hexane	0.42	24.8	0.017	0.0048	07/01/15	07/06/15	TO-17
	241562	TIC-01	isocineole	2.4	24.8	0.096		07/01/15	07/06/15	
	241562		Isophorone	< 0.020	24.8	<0.00081	<0.00014	07/01/15	07/06/15	TO-17
	241562		Isopropanol	< 0.020	24.8	<0.00081	<0.00033	07/01/15	07/06/15	TO-17
	241562		limonene	0.26	24.8	0.010	0.0019	07/01/15	07/06/15	TO-17
	241562		m- & p-xylene	0.068	24.8	0.0027	0.00063	07/01/15	07/06/15	TO-17
	241562		Methylene Chloride	< 0.020	24.8	<0.00081	<0.00023	07/01/15	07/06/15	TO-17
	241562	E	MIBK	1.9	24.8	0.076	0.019	07/01/15	07/06/15	TO-17
	241562		MTBE	< 0.020	24.8	<0.00081	<0.00022	07/01/15	07/06/15	TO-17
	241562		N,N-dimethylformamide	< 0.020	24.8	<0.00081	<0.00027	07/01/15	07/06/15	TO-17
	241562		Naphthalene	< 0.010	24.8	<0.0004	<0.000077	07/01/15	07/06/15	TO-17
	241562		n-Butyl Acetate	< 0.020	24.8	<0.00081	<0.00017	07/01/15	07/06/15	TO-17
	241562		Nonanal	0.23	24.8	0.0092	0.0016	07/01/15	07/06/15	TO-17
	241562		Octanal	0.062	24.8	0.0025	0.00047	07/01/15	07/06/15	TO-17
	241562		o-Xylene	0.029	24.8	0.0012	0.00027	07/01/15	07/06/15	TO-17
	241562	TIC-01	p-Cymene	6.6	24.8	0.27		07/01/15	07/06/15	

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Review: Dan Stoney For Bob Schmitter, Emissions Department Manager 07/07/2015

Analysis: Thermal Desorption Analysis by Gas Chromatography, GCMS
Media: Tenax Tube

MAS Sample ID	Client ID	Qualifier	Analyte	Total ug	Air vol (L)	mg/m³	ppmV	Date Sampled	Date Analyzed	Notes
	241562		Pentanal	< 0.020	24.8	<0.00081	<0.00023	07/01/15	07/06/15	TO-17
	241562		Phenol	0.35	24.8	0.014	0.0037	07/01/15	07/06/15	TO-17
	241562		Styrene	0.025	24.8	0.00099	0.00023	07/01/15	07/06/15	TO-17
	241562		Tentatively Identified Compounds	< 0.020	24.8	<0.00081	<0.0	07/01/15	07/06/15	TO-17
	241562	TIC-01	terpinene 1-ol	0.24	24.8	0.0096		07/01/15	07/06/15	
	241562	TIC-01	terpineol-4	0.24	24.8	0.0096		07/01/15	07/06/15	
	241562		Tetrachloroethylene	0.031	24.8	0.0012	0.00018	07/01/15	07/06/15	TO-17
	241562		tetradecane	0.35	24.8	0.014	0.0017	07/01/15	07/06/15	TO-17
	241562		Toluene	0.32	24.8	0.013	0.0034	07/01/15	07/06/15	TO-17
	241562		Trichloroethylene	< 0.020	24.8	<0.00081	<0.00015	07/01/15	07/06/15	TO-17
	241562		TVOC	55	24.8	2.2		07/01/15	07/06/15	TO-17
	241562		Undecane	0.063	24.8	0.0026	0.0004	07/01/15	07/06/15	TO-17
	241562		Vinyl acetate	< 0.020	24.8	<0.00081	<0.00023	07/01/15	07/06/15	TO-17
	241562		Xylenes, total	< 0.020	24.8	<0.00081	<0.00019	07/01/15	07/06/15	TO-17
1501111-05	268182		1,1,1-Trichloroethane	< 0.020	25.8	<0.00078	<0.00014	07/01/15	07/06/15	TO-17
	268182		1,1-Dichloroethylene	< 0.020	25.8	<0.00078	<0.0002	07/01/15	07/06/15	TO-17
	268182		1,4-Dichlorobenzene	< 0.020	25.8	<0.00078	<0.00013	07/01/15	07/06/15	TO-17
	268182		1,4-Dioxane	< 0.020	25.8	<0.00078	<0.00022	07/01/15	07/06/15	TO-17
	268182		1-Butanol	0.26	25.8	0.010	0.0033	07/01/15	07/06/15	TO-17
	268182		1-Methoxy-2-Propanol	0.024	25.8	0.00092	0.00025	07/01/15	07/06/15	TO-17
	268182		1-Methyl-2-Pyrrolidone	< 0.020	25.8	<0.00078	<0.00019	07/01/15	07/06/15	TO-17
	268182	TIC-01	1-undecene, 4-methyl-	0.12	25.8	0.0048		07/01/15	07/06/15	
	268182		2-Butoxyethanol	0.16	25.8	0.0062	0.0013	07/01/15	07/06/15	TO-17
	268182		2-Ethoxyethanol	< 0.020	25.8	<0.00078	<0.00021	07/01/15	07/06/15	TO-17
	268182		2-Ethoxyethanol Acetate	< 0.020	25.8	<0.00078	<0.00014	07/01/15	07/06/15	TO-17
	268182		2-Ethyl-1-hexanol	0.31	25.8	0.012	0.0023	07/01/15	07/06/15	TO-17
	268182		2-Ethylhexanoic acid	< 0.020	25.8	<0.00078	<0.00013	07/01/15	07/06/15	TO-17
	268182		2-methoxyethanol acetate	< 0.020	25.8	<0.00078	<0.00016	07/01/15	07/06/15	TO-17
	268182		4-Phenylcyclohexene	< 0.010	25.8	<0.00039	<0.00006	07/01/15	07/06/15	TO-17
	268182		4-vinyl cyclohexene	< 0.020	25.8	<0.00078	<0.00014	07/01/15	07/06/15	TO-17

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Media: Tenax Tube

MAS Sample ID	Client ID	Qualifier	Analyte	Total ug	Air vol (L)	mg/m³	ppmV	Date Sampled	Date Analyzed	Notes
	268182		alpha-Pinene	0.024	25.8	0.00091	0.00016	07/01/15	07/06/15	TO-17
	268182	TIC-01	Benzaldehyde	0.068	25.8	0.0026		07/01/15	07/06/15	
	268182		Benzene	< 0.020	25.8	<0.00078	<0.00024	07/01/15	07/06/15	TO-17
	268182		Benzothiazole	< 0.020	25.8	<0.00078	<0.00014	07/01/15	07/06/15	TO-17
	268182		BHT	< 0.020	25.8	<0.00078	<0.000086	07/01/15	07/06/15	TO-17
	268182		Butyraldehyde	< 0.020	25.8	<0.00078	<0.00026	07/01/15	07/06/15	TO-17
	268182		Caprolactam	0.45	25.8	0.017	0.0037	07/01/15	07/06/15	TO-17
	268182		Carbon disulfide	0.13	25.8	0.0049	0.0016	07/01/15	07/06/15	TO-17
	268182		Carbon Tetrachloride	< 0.020	25.8	<0.00078	<0.00012	07/01/15	07/06/15	TO-17
	268182		Chlorobenzene	< 0.020	25.8	<0.00078	<0.00017	07/01/15	07/06/15	TO-17
	268182		Chloroform	< 0.020	25.8	<0.00078	<0.00016	07/01/15	07/06/15	TO-17
	268182		Cyclohexane	< 0.020	25.8	<0.00078	<0.00023	07/01/15	07/06/15	TO-17
	268182	TIC-01	Cyclohexasiloxane, dodecamethyl-	1.1	25.8	0.042		07/01/15	07/06/15	
	268182	TIC-01	Cyclopentasiloxane, decamethyl-	4.1	25.8	0.16		07/01/15	07/06/15	
	268182	TIC-01	Cyclotetrasiloxane, octamethyl-	0.90	25.8	0.035		07/01/15	07/06/15	
	268182	TIC-01	cyclotrisiloxane, hexamethyl-	0.18	25.8	0.0071		07/01/15	07/06/15	
	268182		decane	0.080	25.8	0.0031	0.00053	07/01/15	07/06/15	TO-17
	268182		dodecane	0.050	25.8	0.0019	0.00028	07/01/15	07/06/15	TO-17
	268182		Epichlorohydrin	< 0.020	25.8	<0.00078	<0.0002	07/01/15	07/06/15	TO-17
	268182	TIC-01	ethane, 1,1-dimethoxy-	0.069	25.8	0.0027		07/01/15	07/06/15	
	268182		Ethyl Acetate	0.023	25.8	0.0009	0.00025	07/01/15	07/06/15	TO-17
	268182		Ethyl Benzene	0.024	25.8	0.00094	0.00022	07/01/15	07/06/15	TO-17
	268182		Hexanal	0.19	25.8	0.0075	0.0018	07/01/15	07/06/15	TO-17
	268182		Hexane	< 0.020	25.8	<0.00078	<0.00022	07/01/15	07/06/15	TO-17
	268182		Isophorone	< 0.020	25.8	<0.00078	<0.00014	07/01/15	07/06/15	TO-17
	268182		Isopropanol	0.15	25.8	0.0057	0.0023	07/01/15	07/06/15	TO-17
	268182		limonene	0.16	25.8	0.0063	0.0011	07/01/15	07/06/15	TO-17
	268182		m- & p-xylene	0.045	25.8	0.0018	0.0004	07/01/15	07/06/15	TO-17
	268182		Methylene Chloride	< 0.020	25.8	<0.00078	<0.00022	07/01/15	07/06/15	TO-17

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mg = milligrams

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ppmV = parts per million by volume

Analysis: Thermal Desorption Analysis by Gas Chromatography, GCMS
Media: Tenax Tube

MAS Sample ID	Client ID	Qualifier	Analyte	Total ug	Air vol (L)	mg/m³	ppmV	Date Sampled	Date Analyzed	Notes
	268182		MIBK	< 0.020	25.8	<0.00078	<0.00019	07/01/15	07/06/15	TO-17
	268182		MTBE	< 0.020	25.8	<0.00078	<0.00022	07/01/15	07/06/15	TO-17
	268182		N,N-dimethylformamide	< 0.020	25.8	<0.00078	<0.00026	07/01/15	07/06/15	TO-17
	268182		Naphthalene	0.023	25.8	0.0009	0.00017	07/01/15	07/06/15	TO-17
	268182		n-Butyl Acetate	< 0.020	25.8	<0.00078	<0.00016	07/01/15	07/06/15	TO-17
	268182		Nonanal	0.10	25.8	0.0040	0.00068	07/01/15	07/06/15	TO-17
	268182		Octanal	0.058	25.8	0.0023	0.00042	07/01/15	07/06/15	TO-17
	268182		o-Xylene	0.025	25.8	0.00096	0.00022	07/01/15	07/06/15	TO-17
	268182		Pentanal	0.073	25.8	0.0028	0.00081	07/01/15	07/06/15	TO-17
	268182	E	Phenol	1.0	25.8	0.040	0.010	07/01/15	07/06/15	TO-17
	268182		Styrene	0.026	25.8	0.0010	0.00024	07/01/15	07/06/15	TO-17
	268182		Tentatively Identified Compounds	< 0.020	25.8	<0.00078	<0.0	07/01/15	07/06/15	TO-17
	268182		Tetrachloroethylene	0.041	25.8	0.0016	0.00023	07/01/15	07/06/15	TO-17
	268182		tetradecane	0.030	25.8	0.0012	0.00015	07/01/15	07/06/15	TO-17
	268182		Toluene	0.080	25.8	0.0031	0.00082	07/01/15	07/06/15	TO-17
	268182		Trichloroethylene	< 0.020	25.8	<0.00078	<0.00014	07/01/15	07/06/15	TO-17
	268182		tricosane	0.11	25.8	0.0041		07/01/15	07/06/15	
	268182		TVOC	15	25.8	0.60		07/01/15	07/06/15	TO-17
	268182		Undecane	0.073	25.8	0.0028	0.00045	07/01/15	07/06/15	TO-17
	268182	TIC-01	undecane, 4,7-dimethyl-	0.082	25.8	0.0032		07/01/15	07/06/15	
	268182		Vinyl acetate	< 0.020	25.8	<0.00078	<0.00022	07/01/15	07/06/15	TO-17
	268182		Xylenes, total	< 0.020	25.8	<0.00078	<0.00018	07/01/15	07/06/15	TO-17
1501111-07	247640	TIC-01	(1-Hydroxy-2,4,4-trimethylpentan-3-yl) 2-methy	0.072	25.5	0.0028		07/01/15	07/06/15	
	247640		1,1,1-Trichloroethane	< 0.020	25.5	<0.00078	<0.00014	07/01/15	07/06/15	TO-17
	247640		1,1-Dichloroethylene	< 0.020	25.5	<0.00078	<0.0002	07/01/15	07/06/15	TO-17
	247640		1,4-Dichlorobenzene	< 0.020	25.5	<0.00078	<0.00013	07/01/15	07/06/15	TO-17
	247640		1,4-Dioxane	< 0.020	25.5	<0.00078	<0.00022	07/01/15	07/06/15	TO-17
	247640		1-Butanol	0.16	25.5	0.0061	0.0020	07/01/15	07/06/15	TO-17
	247640		1-Methoxy-2-Propanol	< 0.020	25.5	<0.00078	<0.00021	07/01/15	07/06/15	TO-17
	247640		1-Methyl-2-Pyrrolidone	< 0.020	25.5	<0.00078	<0.00019	07/01/15	07/06/15	TO-17

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Analysis: Thermal Desorption Analysis by Gas Chromatography, GCMS
Media: Tenax Tube

MAS Sample ID	Client ID	Qualifier	Analyte	Total ug	Air vol (L)	mg/m³	ppmV	Date Sampled	Date Analyzed	Notes
	247640		2-Butoxyethanol	0.21	25.5	0.0080	0.0017	07/01/15	07/06/15	TO-17
	247640		2-Ethoxyethanol	< 0.020	25.5	<0.00078	<0.00021	07/01/15	07/06/15	TO-17
	247640		2-Ethoxyethanol Acetate	< 0.020	25.5	<0.00078	<0.00015	07/01/15	07/06/15	TO-17
	247640		2-Ethyl-1-hexanol	0.20	25.5	0.0077	0.0015	07/01/15	07/06/15	TO-17
	247640		2-Ethylhexanoic acid	< 0.020	25.5	<0.00078	<0.00013	07/01/15	07/06/15	TO-17
	247640		2-methoxyethanol acetate	< 0.020	25.5	<0.00078	<0.00016	07/01/15	07/06/15	TO-17
	247640		4-Phenylcyclohexene	< 0.010	25.5	<0.00039	<0.000061	07/01/15	07/06/15	TO-17
	247640		4-vinyl cyclohexene	< 0.020	25.5	<0.00078	<0.00014	07/01/15	07/06/15	TO-17
	247640		alpha-Pinene	< 0.020	25.5	<0.00078	<0.00014	07/01/15	07/06/15	TO-17
	247640	TIC-01	Benzaldehyde	0.079	25.5	0.0031		07/01/15	07/06/15	
	247640		Benzene	< 0.020	25.5	<0.00078	<0.00025	07/01/15	07/06/15	TO-17
	247640		Benzothiazole	0.030	25.5	0.0012	0.00021	07/01/15	07/06/15	TO-17
	247640		Benzyl alcohol	0.064	25.5	0.0025		07/01/15	07/06/15	
	247640		BHT	0.027	25.5	0.0011	0.00012	07/01/15	07/06/15	TO-17
	247640		Butyraldehyde	0.022	25.5	0.00087	0.0003	07/01/15	07/06/15	TO-17
	247640		Caprolactam	< 0.020	25.5	<0.00078	<0.00017	07/01/15	07/06/15	TO-17
	247640		Carbon disulfide	0.13	25.5	0.0050	0.0016	07/01/15	07/06/15	TO-17
	247640		Carbon Tetrachloride	< 0.020	25.5	<0.00078	<0.00012	07/01/15	07/06/15	TO-17
	247640		Chlorobenzene	< 0.020	25.5	<0.00078	<0.00017	07/01/15	07/06/15	TO-17
	247640		Chloroform	< 0.020	25.5	<0.00078	<0.00016	07/01/15	07/06/15	TO-17
	247640		Cyclohexane	< 0.020	25.5	<0.00078	<0.00023	07/01/15	07/06/15	TO-17
	247640	TIC-01	Cyclohexasiloxane, dodecamethyl-	0.81	25.5	0.032		07/01/15	07/06/15	
	247640	TIC-01	Cyclopentasiloxane, decamethyl-	3.0	25.5	0.12		07/01/15	07/06/15	
	247640	TIC-01	Cyclotetrasiloxane, octamethyl-	0.62	25.5	0.024		07/01/15	07/06/15	
	247640	TIC-01	cyclotrisiloxane, hexamethyl-	0.14	25.5	0.0053		07/01/15	07/06/15	
	247640		decane	0.10	25.5	0.0041	0.0007	07/01/15	07/06/15	TO-17
	247640		dodecane	0.050	25.5	0.0020	0.00028	07/01/15	07/06/15	TO-17
	247640		Epichlorohydrin	< 0.020	25.5	<0.00078	<0.00021	07/01/15	07/06/15	TO-17
	247640		Ethyl Acetate	< 0.020	25.5	<0.00078	<0.00022	07/01/15	07/06/15	TO-17

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Analysis: Thermal Desorption Analysis by Gas Chromatography, GCMS
Media: Tenax Tube

MAS Sample ID	Client ID	Qualifier	Analyte	Total ug	Air vol (L)	mg/m³	ppmV	Date Sampled	Date Analyzed	Notes
	247640		Ethyl Benzene	0.023	25.5	0.00092	0.00021	07/01/15	07/06/15	TO-17
	247640		Hexanal	0.17	25.5	0.0067	0.0016	07/01/15	07/06/15	TO-17
	247640		Hexane	< 0.020	25.5	<0.00078	<0.00022	07/01/15	07/06/15	TO-17
	247640		Isophorone	< 0.020	25.5	<0.00078	<0.00014	07/01/15	07/06/15	TO-17
	247640		Isopropanol	< 0.020	25.5	<0.00078	<0.00032	07/01/15	07/06/15	TO-17
	247640		limonene	0.32	25.5	0.012	0.0022	07/01/15	07/06/15	TO-17
	247640		m- & p-xylene	0.038	25.5	0.0015	0.00035	07/01/15	07/06/15	TO-17
	247640		Methylene Chloride	< 0.020	25.5	<0.00078	<0.00023	07/01/15	07/06/15	TO-17
	247640		MIBK	< 0.020	25.5	<0.00078	<0.00019	07/01/15	07/06/15	TO-17
	247640		MTBE	< 0.020	25.5	<0.00078	<0.00022	07/01/15	07/06/15	TO-17
	247640		N,N-dimethylformamide	< 0.020	25.5	<0.00078	<0.00026	07/01/15	07/06/15	TO-17
	247640		Naphthalene	0.062	25.5	0.0024	0.00046	07/01/15	07/06/15	TO-17
	247640		n-Butyl Acetate	< 0.020	25.5	<0.00078	<0.00017	07/01/15	07/06/15	TO-17
	247640		Nonanal	0.13	25.5	0.0052	0.00089	07/01/15	07/06/15	TO-17
	247640	TIC-01	Octadecane, 3-ethyl-5-(2-ethylbutyl)	0.066	25.5	0.0026		07/01/15	07/06/15	
	247640		Octanal	0.052	25.5	0.0020	0.00038	07/01/15	07/06/15	TO-17
	247640		o-Xylene	0.023	25.5	0.0009	0.00021	07/01/15	07/06/15	TO-17
	247640		p-Cymene	0.053	25.5	0.0021		07/01/15	07/06/15	
	247640		Pentanal	0.053	25.5	0.0021	0.00058	07/01/15	07/06/15	TO-17
	247640		Phenol	0.38	25.5	0.015	0.0039	07/01/15	07/06/15	TO-17
	247640	TIC-01	propanoic acid, 2-methyl-, 3-hydroxy	0.13	25.5	0.0051		07/01/15	07/06/15	
	247640		Styrene	0.027	25.5	0.0010	0.00024	07/01/15	07/06/15	TO-17
	247640		Tentatively Identified Compounds	< 0.020	25.5	<0.00078	<0.0	07/01/15	07/06/15	TO-17
	247640		Tetrachloroethylene	0.051	25.5	0.0020	0.00029	07/01/15	07/06/15	TO-17
	247640		tetradecane	0.022	25.5	0.00087	0.00011	07/01/15	07/06/15	TO-17
	247640		Toluene	0.067	25.5	0.0026	0.00069	07/01/15	07/06/15	TO-17
	247640		Trichloroethylene	< 0.020	25.5	<0.00078	<0.00015	07/01/15	07/06/15	TO-17
	247640		TVOC	12	25.5	0.48		07/01/15	07/06/15	TO-17
	247640		Undecane	0.072	25.5	0.0028	0.00044	07/01/15	07/06/15	TO-17
	247640		Vinyl acetate	< 0.020	25.5	<0.00078	<0.00022	07/01/15	07/06/15	TO-17

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Review: Dan Stoney For Bob Schmitter, Emissions Department Manager 07/07/2015

Analysis: Thermal Desorption Analysis by Gas Chromatography, GCMS
Media: Tenax Tube

MAS Sample ID	Client ID	Qualifier	Analyte	Total ug	Air vol (L)	mg/m³	ppmV	Date Sampled	Date Analyzed	Notes
	247640		Xylenes, total	< 0.020	25.5	<0.00078	<0.00018	07/01/15	07/06/15	TO-17
1501111-09	232152		1,1,1-Trichloroethane	< 0.020				07/01/15	07/06/15	TO-17
	232152		1,1-Dichloroethylene	< 0.020				07/01/15	07/06/15	TO-17
	232152		1,4-Dichlorobenzene	< 0.020				07/01/15	07/06/15	TO-17
	232152		1,4-Dioxane	< 0.020				07/01/15	07/06/15	TO-17
	232152		1-Butanol	< 0.032				07/01/15	07/06/15	TO-17
	232152		1-Methoxy-2-Propanol	< 0.020				07/01/15	07/06/15	TO-17
	232152		1-Methyl-2-Pyrrolidone	< 0.020				07/01/15	07/06/15	TO-17
	232152		2-Butoxyethanol	< 0.020				07/01/15	07/06/15	TO-17
	232152		2-Ethoxyethanol	< 0.020				07/01/15	07/06/15	TO-17
	232152		2-Ethoxyethanol Acetate	< 0.020				07/01/15	07/06/15	TO-17
	232152		2-Ethyl-1-hexanol	< 0.033				07/01/15	07/06/15	TO-17
	232152		2-Ethylhexanoic acid	< 0.020				07/01/15	07/06/15	TO-17
	232152		2-methoxyethanol acetate	< 0.020				07/01/15	07/06/15	TO-17
	232152		4-Phenylcyclohexene	< 0.010				07/01/15	07/06/15	TO-17
	232152		4-vinyl cyclohexene	< 0.020				07/01/15	07/06/15	TO-17
	232152		alpha-Pinene	< 0.020				07/01/15	07/06/15	TO-17
	232152	TIC-01	Benzaldehyde	0.0045				07/01/15	07/06/15	
	232152		Benzene	< 0.020				07/01/15	07/06/15	TO-17
	232152		Benzothiazole	< 0.020				07/01/15	07/06/15	TO-17
	232152		BHT	< 0.020				07/01/15	07/06/15	TO-17
	232152		Butyraldehyde	< 0.020				07/01/15	07/06/15	TO-17
	232152		Caprolactam	< 0.020				07/01/15	07/06/15	TO-17
	232152		Carbon disulfide	0.13				07/01/15	07/06/15	TO-17
	232152		Carbon Tetrachloride	< 0.020				07/01/15	07/06/15	TO-17
	232152		Chlorobenzene	< 0.020				07/01/15	07/06/15	TO-17
	232152		Chloroform	< 0.020				07/01/15	07/06/15	TO-17
	232152		Cyclohexane	< 0.020				07/01/15	07/06/15	TO-17
	232152		decane	< 0.020				07/01/15	07/06/15	TO-17
	232152		dodecane	< 0.020				07/01/15	07/06/15	TO-17
	232152		Epichlorohydrin	< 0.020				07/01/15	07/06/15	TO-17

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Review: Dan Stoney For Bob Schmitter, Emissions Department Manager 07/07/2015

Analysis: Thermal Desorption Analysis by Gas Chromatography, GCMS
Media: Tenax Tube

MAS Sample ID	Client ID	Qualifier	Analyte	Total ug	Air vol (L)	mg/m³	ppmV	Date Sampled	Date Analyzed	Notes
	232152		Ethyl Acetate	< 0.020				07/01/15	07/06/15	TO-17
	232152		Ethyl Benzene	< 0.020				07/01/15	07/06/15	TO-17
	232152		Hexanal	< 0.020				07/01/15	07/06/15	TO-17
	232152		Hexane	< 0.020				07/01/15	07/06/15	TO-17
	232152		Isophorone	< 0.020				07/01/15	07/06/15	TO-17
	232152		Isopropanol	< 0.020				07/01/15	07/06/15	TO-17
	232152		limonene	< 0.020				07/01/15	07/06/15	TO-17
	232152		m- & p-xylene	< 0.020				07/01/15	07/06/15	TO-17
	232152		Methylene Chloride	< 0.020				07/01/15	07/06/15	TO-17
	232152		MIBK	< 0.020				07/01/15	07/06/15	TO-17
	232152		MTBE	< 0.020				07/01/15	07/06/15	TO-17
	232152		N,N-dimethylformamide	< 0.020				07/01/15	07/06/15	TO-17
	232152		Naphthalene	< 0.010				07/01/15	07/06/15	TO-17
	232152		n-Butyl Acetate	< 0.020				07/01/15	07/06/15	TO-17
	232152		Nonanal	< 0.020				07/01/15	07/06/15	TO-17
	232152		Octanal	< 0.020				07/01/15	07/06/15	TO-17
	232152		o-Xylene	< 0.020				07/01/15	07/06/15	TO-17
	232152		Pentanal	< 0.020				07/01/15	07/06/15	TO-17
	232152		Phenol	< 0.020				07/01/15	07/06/15	TO-17
	232152		Styrene	< 0.020				07/01/15	07/06/15	TO-17
	232152		Tentatively Identified Compounds	< 0.020				07/01/15	07/06/15	TO-17
	232152		Tetrachloroethylene	< 0.020				07/01/15	07/06/15	TO-17
	232152		tetradecane	< 0.020				07/01/15	07/06/15	TO-17
	232152		Toluene	< 0.020				07/01/15	07/06/15	TO-17
	232152		Trichloroethylene	< 0.020				07/01/15	07/06/15	TO-17
	232152		TVOC	< 0.020				07/01/15	07/06/15	TO-17
	232152		Undecane	< 0.020				07/01/15	07/06/15	TO-17
	232152		Vinyl acetate	< 0.020				07/01/15	07/06/15	TO-17
	232152		Xylenes, total	< 0.020				07/01/15	07/06/15	TO-17

All quality control samples and checks are within acceptance limits unless otherwise indicated.
Reported concentrations are based on sampling information as provided by the client. MAS assumes no responsibility for the accuracy of sampling information. Test results pertain only to those items tested.
Not blank corrected unless otherwise noted.

LOQ = Limit of Quantitation
µg = micrograms
mg = milligrams

µg/m³ = micrograms per cubic meter
mg/m³ = milligrams per cubic meter
ppmV = parts per million by volume

Review: Dan Stoney For Bob Schmitter, Emissions Department Manager 07/07/2015

Acetaldehyde LOQ = 0.018 ug
Formaldehyde LOQ = 0.018 ug
TVOC LOQ = 0.02 ug
1,1,1-Trichloroethane LOQ = 0.02 ug
1,1-Dichloroethylene LOQ = 0.02 ug
1,4-Dichlorobenzene LOQ = 0.02 ug
1,4-Dioxane LOQ = 0.02 ug
1-Butanol LOQ = 0.02 ug
1-Methoxy-2-Propanol LOQ = 0.02 ug
1-Methyl-2-Pyrrolidone LOQ = 0.02 ug
2-Butoxyethanol LOQ = 0.02 ug
2-Ethoxyethanol LOQ = 0.02 ug
2-Ethoxyethanol Acetate LOQ = 0.02 ug
2-Ethyl-1-hexanol LOQ = 0.02 ug
2-Ethylhexanoic acid LOQ = 0.02 ug
2-methoxyethanol acetate LOQ = 0.02 ug
4-Phenylcyclohexene LOQ = 0.02 ug
4-vinyl cyclohexene LOQ = 0.02 ug
alpha-Pinene LOQ = 0.02 ug
Benzene LOQ = 0.02 ug
Benzothiazole LOQ = 0.02 ug
Butylated hydroxytoluene LOQ = 0.02 ug
Butyraldehyde LOQ = 0.02 ug
Caprolactam LOQ = 0.02 ug
Carbon disulfide LOQ = 0.02 ug
Carbon Tetrachloride LOQ = 0.02 ug
Chlorobenzene LOQ = 0.02 ug
Chloroform LOQ = 0.02 ug
Cyclohexane LOQ = 0.02 ug
decane LOQ = 0.02 ug
dodecane LOQ = 0.02 ug
Epichlorohydrin LOQ = 0.02 ug
Ethyl Acetate LOQ = 0.02 ug
Ethyl Benzene LOQ = 0.02 ug
Hexanal LOQ = 0.02 ug
Hexane LOQ = 0.02 ug
Isophorone LOQ = 0.02 ug
Isopropanol LOQ = 0.02 ug
limonene LOQ = 0.02 ug
m- & p-xylene LOQ = 0.02 ug
Methylene Chloride LOQ = 0.02 ug

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Not blank corrected unless otherwise noted.

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mg = milligrams

µg/m³ = micrograms per cubic meter
mg/m³ = milligrams per cubic meter
ppmV = parts per million by volume

MIBK LOQ = 0.02 ug
MTBE LOQ = 0.02 ug
N,N-dimethylformamide LOQ = 0.02 ug
Naphthalene LOQ = 0.02 ug
n-Butyl Acetate LOQ = 0.02 ug
Nonanal LOQ = 0.02 ug
Octanal LOQ = 0.02 ug
o-Xylene LOQ = 0.02 ug
Pentanal LOQ = 0.02 ug
Phenol LOQ = 0.02 ug
Styrene LOQ = 0.02 ug
Tentatively Identified Compounds LOQ = 0.02 ug
Tetrachloroethylene LOQ = 0.02 ug
tetradecane LOQ = 0.02 ug
Toluene LOQ = 0.02 ug
Trichloroethylene LOQ = 0.02 ug
Undecane LOQ = 0.02 ug
Vinyl acetate LOQ = 0.02 ug
Xylenes, total LOQ = 0.02 ug

All quality control samples and checks are within acceptance limits unless otherwise indicated.
Reported concentrations are based on sampling information as provided by the client. MAS assumes no responsibility for the accuracy of sampling information. Test results pertain only to those items tested.
Not blank corrected unless otherwise noted.

LOQ = Limit of Quantitation
µg = micrograms
mg = milligrams

µg/m³ = micrograms per cubic meter
mg/m³ = milligrams per cubic meter
ppmV = parts per million by volume

E = The concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is considered an estimate (CLP E-flag).

All quality control samples and checks are within acceptance limits unless otherwise indicated.
Reported concentrations are based on sampling information as provided by the client. MAS assumes no responsibility for the accuracy of sampling information. Test results pertain only to those items tested.
Not blank corrected unless otherwise noted.

LOQ = Limit of Quantitation
µg = micrograms
mg = milligrams

µg/m³ = micrograms per cubic meter
mg/m³ = milligrams per cubic meter
ppmV = parts per million by volume

1501111

US PUBLIC HEALTH SERVICE, FEDERAL OCCUPATIONAL HEALTH CHAIN-OF-CUSTODY / FIELD DATA SHEET

Materials Analytical Services, Inc.
3945 Lakefield Court
Suwanee, GA 30024

Attn: Sample Receiving (Michael Mount, Project Manager)

Contact Information

Name: CDR Douglas Ebert, PE
Address: 2165 West Park Court, Suite C
Stone Mountain, GA 30087
Phone/Fax: 301-512-1917
Email: douglas.ebert@foh.hhs.gov

PROJECT REFERENCE INFORMATION

Project: FL2049: Cedar Art Allergy Study (FL0033ZZ)
A 138630 S 189844 P 189845
Bldg Number: FL0033ZZ
Location: ~~Dobbins ARB~~

For Lab Use Only

Project /Report #:
Due Date:
Samples Received Chilled? YES NO
Conditions on Receipt with Name & Date

Water Sample Codes[3]

Container Types:
P-Plastic G-Glass V-VOC
Preservatives:
A-None B-H2SO4
C-HNO_3 D-NaOH
D-Other

Turn Around Time Codes[4]

STD	Standard
R	Rush@
2D	Two Day Rush*
ND	Next Day Rush*@
SD	Same Day Rush*@
WH	Weekend/Holiday*

Analysis Requested

EPA-TO 15/17
Aldehydes + Ketones

Sample Number	Type[1]	Media[2]	Collection Date	Collection Time	Sample Location / Description	Air Flow (LpM)	Air Time (Min.)	Air Volume (Liters)	Wipe Area (in^2)	Water Volume (Liters)	Water Code[3]	Turn Around Time[4]	Lab ID #	EPA-TO 15/17	Aldehydes + Ketones	
238089	1	12	7/1	0918	Lobby	0.130	120	15.6	—	—	—	R -	Mon	X		
5815	1	12	7/1	0930	Lobby	0.200	120	24.0	—	—	—	R	"		X	
241562	1	12	7/1	0936	Lobby, inside art enclosure	0.207	120	24.8	—	—	—	R	"	X		
5814	1	12	7/1	0942	Lobby, inside art enclosure	0.205	120	24.6	—	—	—	R	"		X	
268182	1	12	7/1	1157	6F NW 610F	0.200	129	25.8	—	—	—	R	"	X		
5816	1	12	7/1	1202	6F NW 610F	0.200	131	26.3	—	—	—	R	"		X	
247640	1	12	7/1	1309	NW-106C, Nurse's office	0.199	128	25.5	—	—	—	R	"	X		
5813	1	12	7/1	1312	NW-106C, Nurse's office	0.203	125	25.4	—	—	—	R	"		X	
232152	1	12	7/1	—	Blank	—	—	—	—	—	—	R	"	X		

Sample Type Codes[1]
1-Air 2-Water 3-Paint 4-Soil 5-Dust
6-Bulk 7-Wipe 8-Contact Plate
9-Tape 10-Spore Trap (Zefon & others)
11-Other

Sample Media Codes[2]
1-Charcoal 2-XAD 3-Matched Weight
4-Preweighted 5-MEA 6-CCA 7-R2A/TSA
8-Air-O-Cell Cassette 9-MCE Cassette (0.45)
10-MCE Cassette (0.8) 11-MCE Filter 12-Other

Relinquished By	Date & Time	Received By	Date & Time
CDR Douglas Ebert, [redacted] (b) (6)	7-2-15	[redacted] (b) (6)	7-2-15 9:15am

COMMENTS: *email .pdf format report to: douglas.ebert@foh.hhs.gov

* ied to non-viable microbiological samples only. @ Applied to asbestos samples, SD: 2-hour PLM/PCM, 6-hour TEM; ND: 24-hour; R: 3-5 business days. √

ATTACHMENT 3
PHOTOGRAPHS

(b) (7)(F)

[redacted]

(b) (7)(F)